

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PE19334PC00	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/SE2004/001069	International filing date (day/month/year) 30-06-2004	Priority date (day/month/year) 17-12-2003
International Patent Classification (IPC) or national classification and IPC See Supplemental Box		
Applicant Telefonaktiebolaget LM Ericsson (publ) et al		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 7 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ (sent to the applicant and to the International Bureau) a total of 4 sheets, as follows:
 - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

Date of submission of the demand 06-07-2005	Date of completion of this report 31-03-2006
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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE2004/001069

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Cover sheet

International patent classification (IPC)

H04Q 7/38 (2006.01)

H04Q 7/22 (2006.01)

H04Q 7/32 (2006.01)

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Box No. I Basis of the report

1. With regard to the **language**, this report is based on:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b))
- ☐ publication of the international application (Rule 12.4(a))
- ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1 - 11 as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____ as originally filed/furnished
- pages* _____ as amended (together with any statement) under Article 19
- pages* 1 - 4 received by this Authority on 03 - 02 - 2006
- pages* _____ received by this Authority on _____
- ☒ the drawings:
- pages 1 - 5 as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE2004/001069

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-26</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>12, 13, 23</u>	YES
	Claims	<u>1-11, 14-22, 24-26</u>	NO
Industrial applicability (IA)	Claims	<u>1-26</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

The claimed invention refers to the problem of selecting an access network from among one or more access networks based on the end-to-end quality through the available communication paths.

Reference is made to the following documents:

D1: US 2003/0043773 A1
D2: WO 01/63946 A1
D3: US 2003/0026211 A1
D4: US 2003/0076852 A1

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, 14, 24 and 26 and discloses (See [0002]; [0013]; [0015]; [0023] - [0024]; [0030] - [0031]; [0037]; [0058] - [0060]):

D1 relates to a mobile terminal which maintains simultaneous links to multiple wireless networks, as well as a method and system in which it can operate. Dynamic forward and reverse links are selected on a per packet basis after considering characteristics, such as best quality, of all viable links. A link profile comprises detailed information about each viable link including link quality parameters such as for example estimated bit error rate (BER), expected quality or service (QoS) or data rate.

Also D2 and D3 describe similar systems and methods, adapted for selecting an appropriate link (D2: See page 3, line 2 - line 16; page 5, line 6 - line 36; page 7, line 1 - line 27; claims 16-22, D3 See [0005]; [0017] - [0019]; [0021] - [0022]; claim 1, 2).

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V(I)

D4 relates to a communication apparatus which dynamically selects an optimum access channel from a plurality of access channels (see claims 1,4,7,11 paragraph [0013]; [0034]-[0036];[0051]-[0055]). D3 is not further commented in this report.

Claim 1 differs from D1 in that each communication path in claim 1 may comprise different links (wired as well as wireless), while D1 describes measuring of a plurality of parallel paths, each comprising one single link.

Claim 1 also differs from D1 in that the claim proposes that a plurality of radio access networks to be measured on may belong to different operators.

A first problem to be solved is therefore to achieve the same end-to-end quality measuring as is done for paths comprising one single link also for paths comprising different links.

A second problem to be solved is to be able to evaluate paths belonging to different operators.

As for the problem first mentioned, the method in claim 1 does not specify any requirements for evaluating the certain links of a path. Having the knowledge of how to measure the end-to-end quality and considering the fact that claim 1 simply suggests the measuring of end-to-end quality of a path without requiring any evaluation of the links connecting a specific path, and without considering any problems which might relate to the interfaces between different links, a person skilled in the art would be able to use the same procedure as is known from D1 also for the alternative configuration set forth in claim 1. The same result would be achieved from comparing end-to-end quality of a plurality of paths, where each path comprises one single link, as for paths where each path comprises two or more links which different characteristics.

The second problem mentioned merely seems to discuss an administrative problem, rather than a technical problem, especially since no technical aspects associated to the introduction of a plurality of alternative operators are mentioned, neither in the claim, nor in the description.

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V(II)

For the reason set forth above, the method as suggested in claim 1 of the claimed invention is novel and industrially applicable, but fails to involve an inventive step. The same goes for the independent claims 14, 24 and 26, as well as for the dependent claims 18 and 25.

It is commonly known to the person skilled in the art that measuring on parameters associated with wireless links may be performed at a mobile terminal as well as at intermediate nodes located in a network. Also D1 describes a system and network adapted for performing such measuring procedures. Therefore, also claims 2, 3, 15 16 and 17 fail to describe a novel invention.

The subject-matter of claim 4, 5, 7, 10 and 19-21 differ from D1 in that D1 fails to propose the use of acknowledgeable measuring packets through each access.

The problem to be solved is thus to come up with an alternative way of evaluating the end-to-end quality of the available paths.

D4 describes a communication apparatus which dynamically selects an optimum access channel from a number of available channels. Transmission characteristics are being measured by a path characteristic detecting circuit (204) by way of sending out one or more request frame (ping) on each channel and await the response from investigating a characteristic, such as for example delay or data error rate, for evaluation (See [0054]-[0055]; claim 1, 4, 7, 11).

Since D4 refer to the same technical field as D1, it is considered obvious for a person skilled in the art to combine D1 with the quality evaluation method described in D2. For this reason the invention as claimed in claims 4, 5, 7, 10 and 19-21 fail to involve an inventive step.

Claims 6, 8, 9, 11 and 22 only refer to alternatives which are considered obvious to a person skilled in the art, considering what is already known from the combination of D1 with D4. These claims therefore fail to involve an inventive step.

None of the cited documents do, however, discuss or suggest that a transmission is being made via more than one access on the basis of the measured end-to end quality for each access.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V (III)

It is not obvious to the person skilled in the art to introduce such a condition in any of the methods described in the cited documents. Therefore, the invention as described in claims 12, 13 and 23 is novel and industrially applicable and is also considered to involve an inventive step.

To sum up, the invention as claimed in claims 1-11, 14-22 and 24-26 is novel but fail to involve an inventive step. The invention as claimed in claims 12, 13 and 23, however, is both novel and is considered to involve an inventive step. All claims are industrially applicable.